App. No. 10/522,045
Office Action mailed May 14, 2008

IN THE CLAIMS

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Claim 1 is amended.

Listing of Claims:

1. (Currently Amended) A method of collecting a microorganism or a cell from a liquid sample, comprising:

pouring the liquid sample into a centrifugation tube, the centrifugation tube comprising a planar filter supported so as to divide the centrifugation tube into an upper space and a lower space and water-absorbing resin particles disposed on the filter, to bring the liquid sample into contact with the water-absorbing resin particles so that substantially all of a liquid phase part of the liquid sample is absorbed by the water-absorbing resin particles and the microorganism or the cell is caught on a surface of the water-absorbing resin particles;

pouring a collecting solution into the centrifugation tube to bring the collecting solution into contact with the water-absorbing resin particles, so as to collect the microorganism or the cell caught on the surface of the water-absorbing resin particles in the collecting solution; and

centrifuging the centrifugation tube so that the collecting solution containing the microorganism or the cell (i) separates from the water-absorbing resin particles by passing through the filter and (ii) accumulates at a bottom of the centrifugation tube,

wherein the collecting solution is poured into the centrifugation tube without separating the liquid phase part absorbed by the water-absorbing resin particles from the water-absorbing resin particles that have absorbed the liquid phase part.

2-3. (Canceled)

4. (Previously Presented) The method according to claim 1, wherein the centrifugation is performed at 500 to 13000 g for 3 seconds to 60 minutes.

5. (Previously Presented) The method according to claim 1, wherein an amount of the liquid sample added is not greater than a water-absorbing capacity of the water-absorbing resin particles.

6. (Previously Presented) The method according to claim 1, wherein an amount of the collecting solution added is greater than a water-absorbing capacity of the water-absorbing resin particles that have absorbed the liquid phase part

7. (Previously Presented) The method according to claim 1, wherein the water-absorbing resin particles are a hydrophilic cross-linked polymer having a hydrophilic functional group.

8. (Previously presented) The method according to claim 1, wherein the microorganism to be collected is at least one selected from the group consisting of acid-fast bacteria, atypical mycobacteria, gonococcus, legionella bacteria, mycoplasmas, spirochetes, syphilis spirochetes, chlamydiae, rickettsiae, *Mycobacterium leprae*, Spirillum minus, staphylococci, streptococci, *Escherichia coli*, *Pseudomonas aeruginosa*, *Pasteurella pestis*, viruses, Japanese encephalitis virus, hepatitis B virus, hepatitis C virus, ATLV, HIV, and Ebola virus.

9. (Original) The method according to claim 8, wherein the acid-fast bacterium is at least one selected from the group consisting of *M. avium*, *M. intracellularae*, *M. gordonae*, *M. tuberculosis*, *M. kansasii*, *M. fortuitum*, *M. chelonae*, *M. bovis*, *M. scrofulaceum*, *M. paratuberculosis*, *M. phlei*, *M. marinum*, *M. simiae*, *M. scrofulaceum*, *M. szulgai*, *M. leprae*, *M. xenopi*, *M. ulcerans*, *M. lepraemurium*, *M. flavescens*, *M. terrae*, *M. nonchromogenicum*, *M. malmoense*, *M. asiaticum*, *M. vaccae*, *M. gastri*, *M. triviale*, *M. haemophilum*, *M. africanum*, *M. thermoresistable*, and *M. smegmatis*.

10. (Previously presented) The method according to claim 1, wherein the liquid sample is at least one selected from the group consisting of sputum, spinal fluid, feces, saliva, blood, tissues, swab, liquid obtained by gastrolavage, urine, samples obtained by pretreating these biological samples, water in baths, water in swimming pools, water in fish farms, water in rivers, lake water, and seawater.

11. (Original) The method according to claim 1, wherein the amount of the liquid sample is in a range from 50 μL to 500 μL.

12. (Original) The method according to claim 1, wherein the amount of the liquid sample is in a range from 50 mL to 200 mL.

13. (Canceled)

14. (Previously Presented) A method of amplifying or detecting specifically a gene of a microorganism or a cell, comprising:

collecting a microorganism or a cell by the method according to claim 1;

extracting a gene of the microorganism or the cell by adding an extraction reagent solution containing a nonionic detergent to the microorganism or the cell and heating a resultant mixture; and

amplifying or detecting specifically an extracted gene.

15. (Original) The method according to claim 14, wherein the extraction reagent solution also serves as the collecting solution.

16. (Previously Presented) The method according to claim 14, wherein a heating temperature is between 70°C and 100°C.

17. (Previously Presented) The method according to claim14, wherein the heating is performed for 1 to 30 minutes.

18. (Previously Presented) The method according to claim 14, wherein the heating is performed at 96°C for 10 minutes.

19. (Previously Presented) The method according to claim14, wherein a pH of the extraction reagent solution is in a range from 7.0 to 12.0.

20. (Previously Presented) The method according to claim14, wherein a concentration of the nonionic detergent in the extraction reagent solution is in a range from 0.01 to 10 wt%.

21. (Previously Presented) The method according to claim14, wherein the nonionic detergent is at least one selected from the group consisting of D-sorbitol fatty acid esters, polyoxyethyleneglycol sorbitan alkyl esters, and polyoxyethyleneglycol p-t-octylphenyl ethers.

22. (Previously Presented) The method according to claim 14, wherein the extraction reagent solution further contains a metal chelating agent.

23. (Previously Presented) The method according to claim 22, wherein a concentration of the metal chelating agent in the extraction reagent solution is 0.1 to 100 mM.

24. (Previously Presented) The method according to claim 22, wherein the metal chelating agent is at least one selected from the group consisting of ethylenediaminetetraacetic acid (EDTA), ethylene glycol bis(β-aminoethyl ether)-N,N,N',N'-tetraacetic acid (EGTA), diaminocyclohexane tetraacetic acid, o-phenanthroline, and salicylic acid.

25. (Previously Presented) The method according to claim 14, wherein the gene is amplified or detected specifically by a polymerase chain reaction (PCR) method.

26. (Previously Presented) The method according to claim 1, wherein the filter is made of at least one selected from the group consisting of polyvinylidene fluoride, cellulose nitrate,

hydrophilic polyethersulfone, polytetrafluoroethylene, polycarbonate, polyamide, polysulfone, polyethylene, polypropylene and acetylcellulose.